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57.) the observation that with the addition of 3% flowing hydrogen to an argon microwave plasma with a constant input power of 40~W, the gas temperature increased from 400° C to over 750° C; whereas, the 400° C temperature of a xenon plasma run under identical conditions was essentially unchanged with the addition of hydrogen, 183

Finally, the Secret Committee is simply incorrect in its statement on page 3 of the Office Action that the ionization energies of strontium and argon are much greater than that of atomic hydrogen. The ionization energies of H I, Ar I and Sr I given by Lide [David R. Lide, *CRC Handbook of Chemistry and Physics*, 79 th Edition, CRC Press, Boca Raton, Florida, (1998-9), p. 10-175 to p. 10-177] are 13.59844 eV, 15.75962 eV, and 5.69484 eV, respectively.

Conclusion

For the foregoing reasons, Applicant respectfully submits that the subject application fully satisfies the legal requirements of 35 U.S.C. §§ 101 and 112, first paragraph, and is therefore in condition for allowance. A Notice to that affect is earnestly solicited.

Respectfully submitted, Manelli, Denison & Selter, PLLC

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- 49. B. Dhandapani, R. Mills, "Novel Liquid-Nitrogen-Condensable Molecular Hydrogen Gas" (Physical Chemistry Session), June 11, 2003, 36th Middle Atlantic Regional Meeting of American Chemical Society, (June 8–11, 2003), Princeton University, Princeton, NJ.
- 48. P. Ray, R. Mills, "Extreme Ultraviolet Spectroscopy of Helium-Hydrogen Plasma" (Physical Chemistry Session), June 11, 2003, 36th Middle Atlantic Regional Meeting of American Chemical Society, (June 8–11, 2003), Princeton University, Princeton, NJ.
- 47. R. Mills, "Novel Catalytic Reaction Of Hydrogen as a Potential New Energy Source" (Catalysis Session), June 10, 2003, 36th Middle Atlantic Regional Meeting of American Chemical Society, (June 8–11, 2003), Princeton University, Princeton, NJ.
- 46. J. He, R. Mills, "TOF-SIMS and XPS Studies of Highly Stable Silicon Hydride Films" (Inorganic/Solid State Session), June 9, 2003, 36th Middle Atlantic Regional Meeting of American Chemical Society, (June 8–11, 2003), Princeton University, Princeton, NJ.
- 45. B. Dhandapani, R. Mills, "Low Power MPCVD Synthesis and Characterization of Diamond Films on Silicon Substrates" (Inorganic/Solid State Session), June 9, 2003, 36th Middle Atlantic Regional Meeting of American Chemical Society, (June 8–11, 2003), Princeton University, Princeton, NJ.
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- 43. R. L. Mills, "Novel Catalytic Reaction of Hydrogen as a Potential New Energy Source", Division of Industrial and Engineering Chemistry, "Green Chemistry in the Design of Alternative Energy Strategies", symposium, Oral Presentation, 225th ACS National Meeting, (March 23-27, 2003), New Orleans, LA.
- 42. R. L. Mills, "Novel Catalytic Reaction of Hydrogen as a Potential New Energy Source," Monday, November 25, Room 216, Protocol Center, TA-3, Los Alamos National Laboratory.
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